

## Effect of Intervention Training on Mental Abilities of Slow Learners

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**KEYWORDS** Mental Abilities. Slow Learners. Verbal. Perceptual. Quantitative and Memory

**ABSTRACT** To investigate the impact of intervention training on mental abilities of slow learners, 40 slow learners of 5-6 years old of Hisar district were selected. These slow learners were divided into two categories i.e. experimental (20) and control group (20). Impact of intervention training revealed marked improvement in mental abilities of experimental group. Most of the children of pre-testing stage were in the category of low to moderate mental abilities. After intervention the experimental group performs better in all the activities of verbal, perceptual performance, quantitative and memory aspects of mental abilities.

### INTRODUCTION

Learning is an innate urge of every human being. It is a dynamic process irrespective of the disability one has. It depends mainly upon the environmental stimulation, the opportunities and guidance one is able to receive. The process of learning goes on whether the formal schooling takes place or not. But the speed and range of learning are different between one category of children and another.

Slow learners are children who are doing poorly in school, yet are not eligible for special education. Their intelligence scores are likely too high for consideration as a child with mental retardation. Their intelligence test scores are likely too low for these to be a large intelligence achievement test discrepancy usually required for eligibility as child with learning disabilities (Mercer 1996). Although slow learners may have special educational needs, they do not fit neatly into the special education system (MacMillan et al. 1998). These children are also labeled as borderline mentally retarded and they are generally slower to 'catch on' to whatever is being taught if it involves symbolic, abstract or conceptual subject matter. But it is really not that they learn so slowly as that they lag behind in developmental readiness to grasp the concepts that are within easy reach of majority of their age mates. Such children will eventually grasp these basic concepts or subjects easily but about a year or two later than their age mates. They lack concentration, retention and abstract thinking. As a result they find it very difficult to keep up with their age group.

Slow learners usually require some levels of additional support to be successful. Slow learners are disproportionately incarcerated drug addicted, alcohol addicted, pregnant as teens, unemployed, under employed, receiving government assistance and arrested for spousal abuse (Beebe-Frankenberger et al. 2004). Proportionately these problems affect slow learners more often than children labeled mentally retarded. Perhaps this is because children with mental retardation receive additional support through special education. A general education teacher's decision not to provide extra help to a slow learner has life long consequences. This group constitutes approximately 14.1% of the population based on estimation from the normal distribution (Neisser 1998). This warrants intervention training for the slow learners that can help these children to reach as near to normal development as possible. Keeping in mind all the above facts, a study was conducted to assess the gain in mental abilities of slow learners.

### METHODOLOGY

For the purpose of this investigation 40 slow learners (70-90 IQ) were identified from Saint Paul, Monfort, Guru Jambheshwar, Geeta Niketan, Ved High and Sishu Niketan School of Hisar city of Haryana State. These 40 children were divided into two groups (20 control and 20 experimental). The experimental group was selected from the school whose principals allowed imparting intervention training. IQ level of slow learner, served as independent variables and mental abilities of slow learners were dependent variable

of the present study. To measure the IQ of slow learners Stanford Binet Intelligence scale was used and McCarthy scale of children's abilities was administered to assess the mental abilities of 5-6 years old slow learners. On the basis of performance of children in pretesting of mental abilities, intervention training was developed for experimental group covering the activities of verbal, perceptual performance, quantitative and memory aspects. Intervention training was given to the experimental group for a period of one month for five days/week and two hrs/day.

## RESULTS AND DISCUSSION

Table 1 showed that half (50%) of slow learners were in the age range of 60-64 months, 35 percent were in the age range of 65-68 months and 15 percent were in the range of 69-72 months. It was also obvious from the table that 40 percent of slow learners were in the IQ range of 77-83, 37.5 percent were in the IQ range of 84-90 and 22.5 percent were in IQ range of 70-76.

Table 2 revealed the gain in slow learner's ability to express himself verbally and also assessed the maturity of his verbal concepts after intervention. The maximum gain of experimental group was 56 percent in oral vocabulary. Gain in opposite analogies, story, verbal fluency, word and sentences and pictorial memory were 35.55,

28.63, 27.08, 15.33 and 13.33 percent respectively. The minimum gain was in picture vocabulary (2.22%). Shaw (1999) also found that only 6 percent of slow learners passed all component of the Palmetto Achievement Challenge Test, South Carolina's Statewide Achievement Test. Slow learners fail at an alarming rate. Total gain in verbal aspect of experimental group was 27.14 percent. Levin and Berringer (2008) also studied that use of brain based research help to treat the reading deficiencies of slow learners.

Table 3 revealed the gain in reasoning ability of slow learners through manipulation of materials. These children demonstrated such skills as imitation, logical classification and visual organization through a variety of spatial, visual, perceptual and conceptual tasks. The experimental group gain maximum in right left orientation i.e. 41.25 percent. Krishnakumar et al. (2006) also given individualized education programme to slow learners for a period of two months and found significant improvement in their academic functioning. Gain in puzzle solving, draw a design, draw a child, conceptual grouping and tapping sequence were 39.07, 34.73, 30.00, 27.08 and 22.22 percent respectively. The minimum gain was in block building (11.50%) because children with borderline intelligence do not transfer or generalize skills, knowledge and strategies as well as their peers (Shaw 1999). The

**Table 1: Distribution of slow learners according to their age and IQ.**

| S. No. | Variables | Categories   | Frequency          |                         |       |         |
|--------|-----------|--------------|--------------------|-------------------------|-------|---------|
|        |           |              | Control group (20) | Experimental group (20) | Total | Percent |
| 1      | Age       | 60-64 months | 9                  | 11                      | 20    | 50      |
|        |           | 65-68 months | 7                  | 7                       | 14    | 35      |
|        |           | 69-72 months | 4                  | 2                       | 6     | 15      |
| 2      | IQ        | 70-76        | 3                  | 6                       | 9     | 22.5    |
|        |           | 77-83        | 8                  | 8                       | 16    | 40      |
|        |           | 84-90        | 9                  | 6                       | 15    | 37.5    |

**Table 2: Gain in verbal abilities of experimental group.**

| S. No. | Aspects             | Mean difference of pre-testing and post-testing |               | Net gain | Percent gain |
|--------|---------------------|---|---------------|----------|--------------|
|        |                     | Experimental group                              | Control group |          |              |
| 1.     | Pictorial memory    | 1.40  | 0.60          | 0.80     | 13.33        |
| 2.     | Picture vocabulary  | 0.45  | 0.25          | 0.20     | 2.22         |
| 3.     | Oral vocabulary     | 12.00   | 0.80          | 11.20    | 56.00        |
| 4.     | Word and sentences  | 4.60  | 0.00          | 4.60     | 15.33        |
| 5.     | Story               | 3.25  | 0.10          | 3.15     | 28.63        |
| 6.     | Verbal fluency      | 12.00   | 2.25          | 9.75     | 27.08        |
| 7.     | Opposite analogies  | 3.95  | 0.75          | 3.20     | 35.55        |
| 8.     | Total verbal aspect | 37.60   | 4.75          | 32.85    | 27.14        |

**Table 3: Gain in perceptual abilities of experimental group.**

| S. No. | Aspects                      | Mean difference of pre-testing and post-testing |               | Net gain | Percent gain |
|--------|------------------------------|---|---------------|----------|--------------|
|        |                              | Experimental group                              | Control group |          |              |
| 1.     | Block building               | 1.85  | 0.70          | 1.15     | 11.50        |
| 2.     | Puzzle solving               | 13.50   | 2.95          | 10.55    | 39.07        |
| 3.     | Tapping sequence             | 2.10  | 0.10          | 2.00     | 22.22        |
| 4.     | Right left orientation       | 5.05  | 0.10          | 4.95     | 41.25        |
| 5.     | Draw a design                | 6.95  | 0.35          | 6.60     | 34.73        |
| 6.     | Draw a child                 | 6.30  | 0.30          | 6.00     | 30.00        |
| 7.     | Conceptual grouping          | 3.70  | 0.45          | 3.25     | 27.08        |
| 8.     | Total perceptual Performance | 39.00   | 4.60          | 34.40    | 31.55        |

Net gain: Difference between the mean difference of pretesting and post testing of experimental and control group

total gain in perceptual performance was 31.55 percent.

Table 4 showed the gain in slow learner's number aptitude and understanding of quantitative words. The highly gained activity in quantitative aspects of experimental group was backward series (38%) and gain in forward series, counting and sorting was 17.08 and 15.55 percent respectively. The minimum gain was in number question (9.16%). Children with borderline intelligence learn concept more efficiently when they are presented in a concrete manner. Problem becomes more acute as children progress into aspect that is abstract in nature (Singh 2004). Total gain in quantitative aspect was (19.88%). An educational programme with effective instructional practices can build academic

resilience skills to ameliorate the important but often ignored risk factor of borderline intellectual functioning (Shaw 2008).

Table 5 presented the gain in short term memory of the slow learners. The pictorial memory and tapping sequence present auditory and visual stimuli simultaneously; the verbal and numerical memory provides auditory stimuli only. The gain of experimental group in backward series was maximum 38 percent. Gain in story (28.63%), tapping sequence (22.22%), forward series (17.08%) and in word and sentences was (15.33%). Minimum gain was in pictorial memory (13.33%). Children with borderline intelligence have difficulty learning concepts that are removed from the context of their lives. If the material being taught is at least tied to the previously taught

**Table 4: Gain in quantitative abilities of experimental group.**

| S. No. | Aspects              | Mean difference of pre-testing and post-testing |               | Net gain | Percent gain |
|--------|----------------------|---|---------------|----------|--------------|
|        |                      | Experimental group                              | Control group |          |              |
| 1.     | Number questions     | 1.45  | 0.35          | 1.10     | 9.16         |
| 2.     | Forward series       | 2.15  | 0.10          | 2.05     | 17.08        |
| 3.     | Backward series      | 3.95  | 0.15          | 3.80     | 38.00        |
| 4.     | Counting and sorting | 2.05  | 0.65          | 1.40     | 15.55        |
| 5.     | Total quantitative   | 9.80  | 1.25          | 8.55     | 19.88        |

**Table 5: Gain in memory of experimental group.**

| S. No. | Aspects            | Mean difference of pre-testing and post-testing |               | Net gain | Percent gain |
|--------|--------------------|---|---------------|----------|--------------|
|        |                    | Experimental group                              | Control group |          |              |
| 1.     | Pictorial memory   | 1.40  | 0.60          | 0.80     | 13.33        |
| 2.     | Tapping sequence   | 2.10  | 0.10          | 2.00     | 22.22        |
| 3.     | Word and sentences | 4.60  | 0.00          | 4.60     | 15.33        |
| 4.     | Story              | 3.25  | 0.10          | 3.15     | 28.63        |
| 5.     | Forward series     | 2.15  | 0.10          | 2.05     | 17.08        |
| 6.     | Backward series    | 3.95  | 0.15          | 3.80     | 38.00        |
| 7.     | Total memory       | 17.80   | 1.05          | 16.75    | 21.47        |

Net gain: Difference between the mean difference of pretesting and post testing of experimental and control group

information then instructions becomes inefficient (Singh 2004). Total gain in memory was 21.47 percent. Technologies such as text-to-speech, speech recognition, graphic organizers and e-resources can be integrated into sound pedagogy to help struggling learners achieve both academic and technological success (Silver and Fleischman 2006).

### CONCLUSION

The findings of the present study prove that due to intervention there was gain in all aspects of mental abilities of experimental group slow learners. The care, education and training of the slow learner can make it possible for him to cover up earlier deficiencies and become an achiever. By developing a modified curriculum based on the research with slow learners, there is a strong likelihood that more slow learners will pass high stake tests (Shaw et al. 2005).

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